Patent Claims

1. A semiconductor component having a semiconductor substrate and having an insulating layer produced on the semiconductor substrate and having a capacitance structure (K) produced in the insulating layer,
characterized in that
- the capacitance structure (K) has a first substructure (T1a) which has a cohesive latticed metal region (G1a) which extends essentially in one plane (M1) parallel to the substrate surface and is electrically connected to a first connecting line, and
- which first substructure has electrically conductive regions (P1a; KN) which are arranged in the cutouts in the latticed region (G1a) of the first substructure (T1a) at a distance from the edge regions of the cutouts in the plane (M1), and the electrically conductive regions (P1a; KN) are electrically connected to a second connecting line.

2. The semiconductor component as claimed in claim 1, characterized in that the electrically conductive regions are metal plates (P1a to P1c) or node points (KN) between via connections.

3. The semiconductor component as claimed in either of claims 1 and 2,
characterized in that
the capacitance structure (K) has a second substructure (T1b) which is produced parallel to and at a distance from the first substructure (T1a) and which has a metal, cohesive latticed region (G1b), the first and second substructures (T1a, T1b) being electrically connected.

4. The semiconductor component as claimed in claim 3,

characterized in that

the second substructure (T1b) is of the same design as the first substructure (T1a), and the two substructures (T1a, T1b) are arranged offset from one another such that the electrically conductive regions (P1a) of the first substructure (T1a) are arranged vertically above the crossing points (KP) in the latticed region (G1b) of the second substructure (T1b), and the crossing points (KP) in the latticed region (G1a) of the first substructure (T1a) are arranged vertically above the electrically conductive regions (P1b) of the second substructure (T1b).

5. The semiconductor component as claimed in either of claims 3 and 4,
characterized in that
the crossing points (KP) in the latticed region (G1a) of the first substructure (T1a) are electrically connected to the electrically conductive regions (P1b) of the second substructure (T1b) which are arranged vertically below, and the electrically conductive regions (P1a) of the first substructure (T1a) are electrically connected to the crossing points (KP) in the latticed region (G1b) of the second substructure (T1b) which are arranged vertically below, by means of at least one respective via connection (V).

6. The semiconductor component as claimed in claim 3, characterized in that
the latticed region (G1b) of the second substructure (T1b) is offset from the first substructure (T1a), so that the electrically conductive regions (P1a) of the first substructure (T1a) are arranged vertically above the crossing points (KP) in the latticed region (T1b) of the second substructure (G1b).

7. The semiconductor component as claimed in claim 6, characterized in that

the electrically conductive regions (P1a) of the first substructure (T1a) and the crossing points (KP) in the latticed region (G1b) of the second substructure (T1b) are electrically

connected by means of one or more respective via connections (V).

8. The semiconductor component as claimed in one of claims 3 to 7,
characterized in that
a further substructure is in the form of a metal plate (MP) which is electrically connected to the crossing points (KP) in a latticed region (G1a; G1b) of a substructure (T1a, T1b) or to the electrically conductive regions (P1a, P1b) by means of one of more respective via connections (V).

9. The semiconductor component as claimed in one of the preceding claims,
characterized in that
the latticed regions (G1a to G1c) have at least two square or round cutouts.

Amended by Applicant

Abstract

Semiconductor component comprising an integrated latticed capacitance structure

An insulating layer which is produced on a semiconductor substrate has a capacitance structure (K) produced in it. The capacitance structure (K) has at least one first substructure (T1a) which has a metal latticed region (G1a to G1c) and electrically conductive regions (P1a to P1c) which are arranged in the cutouts in the latticed region (G1a to G1c), the latticed region (G1a to G1c) being electrically connected to a first connecting line, and the electrically conductive regions (P1a to P1c) being electrically connected to a second connecting line.

(Figure 1)